

**PDS4 Core Tools**

Tool	Tool Name	8/26/2014 and Oct MC Telecon Discussion	Status
<b>Label Design</b>  Intended to be a GUI-based tool for designing PDS4 label templates that conform to the PDS master schema and any included Mission/Discipline-specific	Oxygen/Eclipse	The MC discussed that investments are already being made in this area. Two efforts are underway from AMMOS and ARC. There is no additional gaps identified.	COTS/Open Source
	GUI Tool		Available by AMMOS and ARC teams
<b>Label Generation</b>  Software for generating PDS4 labels from existing PDS3 labels or a PDS4 DOM in bulk.	Generate Tool	The MC suggested that these two tools could be ultimately brought together and integrated into the a common PDS4 tool.	Generate tool Included in Build 5a
	pds.docgen		Available at PPI
<b>Local Data Dictionary Generation</b>  Software for generating a Local Data Dictionary in the form of an XML Schema file that can be referenced by product labels.	LDDTool	LDDTool is being used fairly existensivly. The original version was developed as a stopgap, however, it is now being improved to be integrated as a core software tool.	Included in Build 5a
<b>Label and Data Validation</b>  Software for validating PDS4 product labels and product data. The associated specific schema for the product label specifies syntactic and semantic constraints. The product label itself specifies the constraints for the data.	Validate Tool	The MC discussed that one canonical tool should be developed. IPDA also desires on validation tool. Extensions are being planned to the validate tool in FY15.	Included in Build 5a
	Web-based Validator	The MC discussed a GUI-based interface with different options that would integrate with the validate tool including dumping a report for viewing by a open/COTS-based tool.	Not developed yet. ARC proposed.
<b>Label and Data Transformation</b>  Software for reading and writing PDS4 data products that also includes transforming data and label files into various formats. See the Format Transformation sheet of this document for the list of requested transformations.  (The Format Transformation list will be revisited including adding transformations from the System Services Requirements Discussion wiki page: <a href="https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/System+Services+Requirements+Discussion">https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/System+Services+Requirements+Discussion</a> )	PDS4 Tools	A core library for reading and writing PDS4 data products exists.	Included in Build 5a
	Transform Tool	The MC discussed the need to begin identifying different transformations beyond the current set that is provided for imaging and a few other basic data formats. It was also suggested that nodes work with EN to integrate other data formats into these tools. There was also some discussion about ensuring that XSLT and other transformation capabilities for making XML easier to read be made more readily available to the nodes.	Included in build 5a
<b>Visualization</b>  Software for displaying and visualizing PDS data products. Intended to include functionality currently provided by NASAView and TBTool for PDS3 data products. See the Quick-look Display section on the System Services Requirements Discussion wiki page: <a href="https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/System+Services+Requirements+Discussion">https://oodt.jpl.nasa.gov/wiki/display/pdscollaboration/System+Services+Requirements+Discussion</a> .	TBD	The MC felt that PDS should not develop its own visualization platform, but rather look to support the NASAView functionality by taking a PDS4 product and then ensuring that it can be displayed off the shelf tools. It was also suggested that ImageMagick could be used to provide this functionality. Most feel that havnig the functionality is important for supporting peer reviews and mechanims to do a quality check on the data.	Not developed yet.
<b>Bundle Browser</b>  Software for browsing labels and data within a bundle. Includes incorporating capabilities for transforming labels and data to viewable formats from the Label and Data Transformation software.	TBD	<i>This was considered a low priority tool.</i>	Not developed yet.
<b>PDS4 Data Dictionary Lookup Tool</b>	TBD	At the IPDA meeting, ESA requested a PDS4 version of a data dictionary lookup tool. This is currently under development.	Planned for Build 5b.